

The Art of Amphibious Operations: can Europe play the American Way?

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*The Art of Amphibious Operations: can Europe play the American Way?*

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## **EXECUTIVE SUMMARY**

**Title:** The Art of Amphibious Operations: can Europe play the American Way?

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**Thesis:** Within the art of Expeditionary Amphibious Operations, the United States of America will continue to view handpicked European amphibious forces more as an asset than a liability, ensuring their status as partner of choice alongside the US Expeditionary Strike Group in any future operation.

**Discussion:** The security environment demand that contemporary operations are usually conducted in coalitions, generally led by the United States of America (US). However, the rapid US military technological innovations generate an asymmetric advantage compared to Europe (EU) and a concern that EU will be unable to maintain a minimum level of interoperability with the US. Since this subject is wide-ranging, this paper will solely focus on expeditionary amphibious operations. The study develops the theme of interoperability by exploring its components and importance, and applies these, based on the pillars of Doctrine-Organization-Training-Equipment-Support (DOTES), to the emerging US Expeditionary Strike Group and European Amphibious Initiative (EAI) force structures and capabilities.

**Conclusion:** The US will continue to develop its expeditionary amphibious power projection capability rapidly. Notwithstanding this, EU is evolving in terms of its thinking, structures and equipment capabilities that will continue to demonstrate its utility in the amphibious arena across the spectrum of operations. However, the establishment of an integrated standardized EAI training program combined with a certification process to validate operational readiness is highly recommended. In addition, success of the EAI should not rest on expensive US mirror equipments. Instead, the EU approach should represent a change in "mindset" encouraging commanders to think differently, to improvise with current capabilities and to remain flexible in order to apply the tenets of the maneuverist approach to the littoral environment. From this perspective, this paper concludes that handpicked EAI forces will continue to ensure that its capabilities are assessed as more of an asset than a liability. A maturing EAI guarantees that it will be able to operate the "American Way", as the partner of choice, alongside the ESG for any future expeditionary amphibious operation.

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## INTRODUCTION

The complexities of the security environment demand that contemporary operations are usually conducted in coalitions, generally led by the United States of America (US). Combined with this, the last decade has seen rapid US technological innovation in the development of weapons and capabilities, generating an asymmetric advantage. Much has been written in US defense journals and other publications about a Revolution in Military Affairs (RMA) brought about by such technological advances. This has prompted the US Armed Forces unilaterally to review the way they conduct military operations and embark upon a process leading to transformational change. This developed growing concern among US allies that they will be unable to afford the technology to adapt in the same way, rendering them unable to maintain a minimum level of interoperability with the US. This could have grave consequences in that certain US allies may, in the future, be unable to participate in certain types of multinational operation, ultimately making their forces obsolescent for global security missions.

Since this subject is wide-ranging, and given the current national strategies of Europe (EU) and the US to pursue expeditionary operations outside of NATO's traditional areas, the scope of this paper will be to limit analysis to a single

area of defense capability, that of expeditionary amphibious operations. Not only is this a sector within US national defense seeing rapid change, development of future concepts, and significant investment in new equipments, it is also an area which is receiving attention in the European Security and Defense Policy (ESDP)<sup>1</sup>, providing the study with contemporary relevance.

The study begins at the strategic level by reviewing the theme of interoperability, exploring its components and importance, and applying these to emerging US and EU expeditionary amphibious force structures and capabilities. There is much that could be covered in this, so this paper refines its analysis by specifically considering the pillars of DOTES: **D**octrine, **O**rganization, **T**raining, **E**quipment, and **S**upport. In the end this paper will conclude that the US will continue to develop its expeditionary amphibious power projection capability rapidly. This will ensure that the US dictates future coalition partners and their roles when these alliances are formed. Notwithstanding this, the EU is evolving in terms of its thinking, structures, and equipment which will continue to demonstrate its utility in the amphibious arena across the spectrum of operations.

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<sup>1</sup> ESDP is the policy by which EU can rectify the balance between European and American contribution to global security and stability issues, and generate a constructive contribution to NATO.



In short, this paper will show that, within the art of Expeditionary Amphibious Operations, the US will continue to view handpicked EU amphibious forces more as an asset than a liability, ensuring their status as partner of choice alongside the US Expeditionary Strike Group in any future operation.

## Chapter 1 - DOCTRINE

The manner in which a military fights is defined by its doctrine. Conceptual and doctrinal interoperability is desirable at the operational and tactical levels, defining military thinking, processes and procedures. Certainly the US would prefer an optimal level of doctrinal consistency by allies converging to its own standards.<sup>1</sup> What is key is consistency in the way forces operate and whether or not they are complementary. During Operation ALLIED FORCE there was disparity between the doctrinal application of force projection between the US and other NATO nations (excluding the UK and Canada), resulting in some forces being left without a clear mission.<sup>2</sup> Further, concepts and doctrine drive technological developments. For this reason a doctrine gap between the US and other NATO nations has led to a gap in capability, as this paper will show in Chapter 4 - Equipment. This, in turn, has limited the contribution of these other nations to second order and largely irrelevant tasks.

The US Joint Vision concept paper, first published in 1996<sup>3</sup>, attempted to template the roles and effects of the US military in the current age: "Dominant maneuver [*sic*], precision engagement, focused logistics and full dimensional

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<sup>1</sup> Gause K, Lea C., Whiteneck D, Thompson E, 'US Navy Interoperability with its High-End Allies', URL: [www.dodccrorg/2000ICCRTS/cd/papers/Track3/](http://www.dodccrorg/2000ICCRTS/cd/papers/Track3/), 8.

<sup>2</sup> Gause, 10.

<sup>3</sup> US Joint Chiefs of Staff, *Joint vision 2010* (Washington, DC: US Govt. printing Office, 1996).

protection.”<sup>4</sup> Common military wisdom also tells us that doctrine should not be dogma – and the late nineties also saw the emergence of an excess of robust thought as the US Navy developed and asserted her “*raison d’etre*” in the post-Cold War era. A series of posture statements were issued by the US Department of the Navy, including “From the Sea” (1992); “Forward from the Sea” (1994); “Operational Maneuver from the Sea” (1996) and culminating in “Forward...from the Sea: Anytime...Anywhere” (1998). In essence, these publications espoused an approach to maritime operations which linked the element of operational-level maneuver (previously more traditionally associated with land warfare), to the inherent mobility, firepower and communications offered by naval warfare. The principles of current US navy doctrine place emphasis on operational-level objectives, using exploitation of the “maritime flank” as a maneuver space. It pits strength against vulnerabilities, emphasizing the maximum exploitation of intelligence assets. Rapidly deployable, expeditionary and completely joint maritime forces, will fight network-enabled or Network-Centric warfare – by using secure, real-time information technology systems – sharing a common battle space picture and with 24-hour total situational awareness. Longer range precise munitions and information gathering assets will

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<sup>4</sup> US Joint Chiefs of Staff (2000), *Joint vision 2020* (Washington, DC: US Govt. Printing Office, 2000), 26-34.

be able to determine the course of events over considerable distances inland and complete the vision.

In addition to this baseline, the two most recent developments in US Maritime doctrine have been the 2001 publication of "Expeditionary Maneuver Warfare" (EMW) by the USMC, and "Sea Power 21" (2002) by the US Navy. Whilst both similar in outlook, EMW encapsulates the existing core competencies of the USMC, as envisaged for the early part of the 21<sup>st</sup> century. It places a great emphasis on the current capabilities of the US and fits fully into the overarching strategy put forward in Sea Power 21. It also highlights future equipment and capability enhancements. These include increased strategic agility, operational reach and tactical flexibility. Support and sustainment is addressed by the concept of "Sea Basing", using enhanced pre-positioned platforms and enhanced Ship-To-Objective-Maneuver (STOM) and Over-The Horizon (OTH) lift capabilities.

Of note is the renewal of a commitment to individual skills and military education, particularly among leaders at all levels.<sup>5</sup> Precise and devastating fires remain a key component, all backed up by enhanced intelligence networks aiding Command, Control, Communication, Computers (C4) and decision-making. "Sea Power 21" presents an equally

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<sup>5</sup>. Headquarters USMC (2001), *Expeditionary Maneuver Warfare*, (Department of the Navy: Washington DC), 9.

convincing image, with the triad of Sea Strike, Sea Shield (Force Protection) and Sea Basing. It is underpinned by complete integration of information systems - connecting weapons sensors, intelligence, surveillance and target acquisition (ISTAR) systems, own and enemy disposition displays - all with the maneuverist motive of infiltrating the enemy's decision cycle. In the relatively short period of time since the end of the Cold war, the US Navy and Marine Corps Team is clearly making a concerted effort to impose a decisive effect on the land.

In the same way, the UK produced her Maritime concept with the publication in 1995 of "The Fundamentals of British Maritime Doctrine", and its 1999 successor "British Maritime doctrine". Students of the US approach would be familiar with the emphasis placed on the importance of Joint operations and Maneuver warfare: "At the operational and strategic level, joint doctrinal concepts are likely to prevail... such as main effort, center of gravity, tempo, simultaneity and the culminating point."<sup>6</sup> These publications were accompanied by contributions from UK amphibious forces in "the UK Approach to Amphibious Operations" (1997) and the "Littoral Maneuver concept paper" (2003). These formed, together with the new

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<sup>6</sup> BR 1806 (1999), *British Maritime Doctrine*, Second Edition, (London: HMSO), 40.

emerged US doctrine, the basis for the rewriting of the old NATO amphibious doctrine and resulted in a new publication: ATP8B. ATP8B reflects a significant reorganization of the doctrine, including the splitting of the publication in two volumes. This publication will combine the ATP's 8A,36,37 and 39. It is a two-volume set, volume I covering amphibious planning and volume II contains detailed information and procedures. ATP8B also synchronises other emerging NATO doctrine, both service and joint. Portions of Volume I are reflected in AJP3-1-5. The AJP will be aimed at the operational level while ATP8B is focused on the tactical level. The end result will be three books aimed at different audiences.

The three books advocate a doctrine of indirect approach, allowing smaller forces to offer more than the sum of their parts. This doctrine is particularly suited to smaller EU navies, which are ill-placed to fight large scale wars, and is already common currency within the majority of EU navies. The ATP8B doctrine stresses the effect that a maritime force may have on the land, making mention of the effects of enhanced precision munitions, sensors and Unmanned Aerial Vehicles (UAVs), whilst lauding its ability to be task-organized and repackaged to suit a range of military missions. It is only

in the scope and scale of these missions that the EU fall short of their US cousins, and this will be discussed further under capabilities. Thus far then, the US and EU (particularly the UKNL) appear to be in accord, at least at the doctrinal level, and in their aspirations to achieve swift dominance, and provide timely support in future expeditionary amphibious conflicts.



**Figure 1: UK Littoral Manoeuvre Concept**

## Chapter 2 - ORGANIZATION

NATO has recently adopted the term "operational interoperability," which recognizes that interoperability should not be limited to the narrow technical dimension of simply tying systems and equipment together in order to exchange data but is closely related how *forces* are organized.<sup>1</sup> Unfortunately EU's ability to implement its expeditionary amphibious operations with the American concept of Operational-Maneuver-From-The-Sea (OMFTS) is problematic, as there are numerous unresolved technical issues.<sup>2</sup> These issues are out of the scope of this paper; however, it is necessary to consider the development of force structures.

The USMC used to define the force structure for deploying from the sea as simply "a Marine Expeditionary Force (MEF) as part of a naval force."<sup>3</sup> However, the landing of a division-plus sized force ashore represented a prohibitive requirement in shipping, airlift and sea-based logistic support.<sup>4</sup> In a quantitative analysis, it was argued that to realize the concept, "there must be a shift to a more lethal landing force having smaller logistical demands."<sup>5</sup> Force structures were

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<sup>1</sup> Gause K, Lea C., Whiteneck D, Thompson E, 'US Navy Interoperability with its High-End Allies', URL: [www.dodccrorg/2000ICCRTS/cd/papers/Track3/](http://www.dodccrorg/2000ICCRTS/cd/papers/Track3/), 2.

<sup>2</sup> Such as the tilt rotor program, expeditionary fighting vehicle and development of OTH sea-based fires.

<sup>3</sup> Oliver L.J. (2000), *OMFTS: Realizing a Concept* (Marines Corps Gazette, 9/00), 46.

<sup>4</sup> It is estimated that 'the number of aircraft both fixed and rotary wing to support a MEF conducting OMFTS is six times greater than the current out loads.' Oliver, 46.

<sup>5</sup> Beddoes, M.W. (1997), *Logistical Implications of OMFTS* (Naval War College Review, Vol L, No4), 47.



studied by the OMFTS Working Group of the Marine Corps Warfighting Laboratory (MCWL).<sup>6</sup> Ultimately, the MCWL concluded that logistical air re-supply was the limiting factor and recommended a smaller force that is able to deliver similar operational effects. Thus, currently the MCWL is concentrating on conducting STOM at the Marine Expeditionary Unit (MEU) level.<sup>7</sup> The USMC typically deploys as a combined-arms Marine Air-Ground Task Force (MAGTF) which is scalable and tailorable, to the mission.<sup>8</sup> In this way the MEU would form the MAGTF at the battalion level. An example of such a force is the Expeditionary Strike Group (ESG), whose conceptual organization was tested in Task Force 58 (TF58).<sup>9</sup>

It must be noted that the nature of operations have changed since 9/11, and the ensuing global war against terrorism has tended towards the deployment of smaller, more agile and lethal forces. If this tendency continues, then OMFTS will be easier to execute. Whether the trend continues in this way, and certainly beyond the 2015+ timeframe, is conjecture. Ultimately, the requirement to deliver a scalable, tailored, balanced force will remain.

So why are force structures important to this debate? If it is accepted that the USMC will need to accept smaller, more

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<sup>6</sup> The MCWL at the MCCDC in Quantico, VA serves as the conduit for operational reform in the USMC.

<sup>7</sup> Seminar CG # 1, Rodebough (3 September 2004).

<sup>8</sup> US Marine Corps Concepts and Programs 2002, 17.

<sup>9</sup> TF58 was deployed as an ESG during Operation ENDURING FREEDOM.

lethal force structures, then it is possible to postulate that any ally capable of delivering a credible force from its own specialist amphibious shipping would become an attractive option for the US to include as part of the campaign plan. Such a force can be offered by the European Amphibious Initiative (EAI), which is a flexible task-organized grouping consisting of amphibious shipping with an embarked amphibious force scalable from a battalion to a three-brigade level and supported by a Tailored Air Group (TAG) of air-lift assets.

Linked to this is the likely nature of the future battlefield. In the past, interoperability in amphibious operations was achieved by dividing up tasks (sectorization) within the various amphibious task groups and limiting boundaries of operation in order to de-conflict activity. This approach clearly has the advantage of reducing the need for close coordination among assets of vastly different capabilities and allows a nation to contribute to the operation. The nature of contemporary operations recognizes non-linear battle space, much of which will be insecure, thus limiting the practice of sectorization. If operational maneuver within the littoral, non-linear battle space is to be achieved, then all forces will need to be integrated fully into the plan. In order for a force to be relevant in this environment, it cannot operate only on the periphery.

Instead, it must demonstrate a complementary interoperable capability.<sup>10</sup> However, the key will be to ensure that this level of inter-operability is achieved with the full development of the ESG and the EAI concepts and their accompanying equipment programs. So, how is the force structure of the ESG presently organized?

### **Expeditionary Strike Group (ESG)**

The ESG is a force concept that incorporates the amphibious capabilities of an Amphibious Ready Group (ARG) with the increased capabilities of surface combatants, a maritime patrol aircraft, and submarine assets.<sup>11</sup> At present, the ARG is composed of three amphibious ships: an Amphibious Assault Ship, an Amphibious Platform Dock, and a Dock Landing Ship. The amphibious ships form the sea base for the embarked landing force complete with command and control facilities, their logistics, and STOM-assets.

The ESG is a component of the larger Expeditionary Strike Force, which is composed of the ESG, a Carrier Strike Group, and independent Surface Action Groups. The ESG, in concert with the other groups, will have "the ability to disperse

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<sup>10</sup> A contemporary example of operational interoperability is the integration of USMC units with the UK AF during Operation TELIC in the Gulf where the US 15<sup>th</sup> MEU acted under operational command of 3 Cdo Bde RM, which itself was under direct command of 1 MEF, in an operation to take the key southern Iraqi city of Basra and nearby oil fields.

<sup>11</sup> See Appendix A.

strike capabilities across a greater range of the force, increasing the striking power of the ARG."<sup>12</sup> The ESG concept is not new. In fact, during conflicts such as Operation DESERT STORM and Operation ENDURING FREEDOM, surface combatant ships have usually provided defense or protection for the ARG. The ESG concept is thus an evolution of the Navy Expeditionary Task Force introduced in the 1990's.<sup>13</sup>

### **European Amphibious Initiative (EAI)**

The EAI draws together those European nations with a significant amphibious capability, France, Spain, Italy, the Netherlands, and the United Kingdom. The longer-term vision is for EU amphibious forces to be able to work together more coherently, thereby enabling more rapid assembly of a combined amphibious force for NATO or EU-led operations, such as NATO Response Force (NRF) or European Rapid Reaction Force (ERRF) operations. The amphibious forces are among the contributions pledged by EU countries to the ERRF in the Helsinki Headline Goal.<sup>14</sup> The EAI aims to coordinate operational and technological developments to improve joint force integration, force projection, and command and control. It strives to

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<sup>12</sup> John Pike, (2002), *Expeditionary Strike Group* (Global Security organization, 11/02).

<sup>13</sup> Pike.

<sup>14</sup> The, 5 Dec 2000, launched EAI is a result of the Helsinki European Council of Dec 1999 where EU announced their European Security and Defense Initiative. The council adopted a Headline Goal defining the repertory of force capabilities needed for EU-led operations, and launched the process of getting European states to pledge national contributions to it.

create an architecture of cooperative EU amphibious forces by adapting and harmonizing existing forces, planned capability enhancements, regular exercises, exchange of personnel, and discussion of tactical concepts.<sup>15</sup> Short-term goals are the trial of common Standard Operating Procedures (SOPs) and the commonly agreed command structure.<sup>16</sup> After these goals are accomplished, the EAI establishes a planning capability and identifies interoperable standards. The standardization and compatibility of command and control and equipment is considered to be a long-term goal, i.e. beyond 2011.

The EAI lays down a number of principles, which allow for greater collaboration.

Any future force must be able to operate alongside a wide range of allies and encourage the development of amphibious capability across EU. Operational and technological developments require harmonization across participants. And finally, the ability to operate with US amphibious forces must be maintained while improving the ability of an independent EU force to take part in more demanding operations.<sup>17</sup>

Furthermore, during the Madrid meeting in November 2001 it was agreed that a common set of SOPs had to be developed by the five nations, similar to United Kingdom and Netherlands

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<sup>15</sup> Nicholas Fiorenza (2002), *Euro Marines, European amphibious forces work together to improve their crisis-response capabilities* (Armed Forces Journal International, 4/02), 47.

<sup>16</sup> Short-term goals have to be reached at the end of 2006, medium-term goals at the end of 2011 and long-term goals beyond 2011.

<sup>17</sup> Royal Marines Command Notes – HQRN.

Amphibious Force (UKNLAF) SOPs.<sup>18</sup> In addition, lead nations were appointed to develop those SOPs.<sup>19</sup>

As characteristic in EU, an important part of the EAI is the formation of steering and working groups. These groups have been set up to implement the EAI, and both the NATO and the EU military committees are kept informed.<sup>20</sup> Steering and working groups will also enhance cooperation among EU amphibious forces through closer liaison, provision of guidance, identification of joint training opportunities, exchange of information, and facilitation of liaison officers. Participation is not limited to the five original members of the EAI; in fact, any EU nation with an amphibious ambition, no matter the size of this ambition, can participate in one of the working groups.

As a force, the EAI has the potential of a landing force at divisional strength, i.e. three brigades. In 2006, the amphibious force will consist of two Landing Helicopter Docks, one Landing Platform Helicopter, ten Landing Platform Docks, four Landing Ship Docks, three Landing Ship Tanks and one updated Landing Ship Logistic.<sup>21</sup> Interesting to note is the

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<sup>18</sup> The United Kingdom and Netherlands Amphibious Force (UKNL AF) was established on 9 May 1973 with the signing of the Memorandum of Understanding by both nations and started a formation that was based on a single doctrinal and operational understanding and therefore effective and fully operational. This unique partnership has gone on to develop into the leading and only fully integrated European Amphibious Force in existence.

<sup>19</sup> EAI working group, Madrid November 2001.

<sup>20</sup> Fiorenza, 47.

<sup>21</sup> See figure 2.

fact that before that date the present “outdated” amphibious helicopter force will be replaced by new and more capable medium transport helicopters as the European NH90 and EH101.<sup>22</sup> A considerable force, especially when one takes into account the fact that before 2010, more Landing Platform Docks will be added as well as multi-role aircraft carriers.<sup>23</sup>



**Figure 2: European Amphibious Initiative**

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<sup>22</sup> Both SIAF and UKNLAF will operate the NH90 and EH101, France will operate their Puma and Cougar transport helicopters (see Appendix B).

<sup>23</sup> See Appendix B for a detailed overview of the organization structure, capabilities and capital equipment of the EAI.

### Chapter 3 - TRAINING

The nexus of political interoperability is cultural inter-operability, which is simply defined as "commonality of military culture which has developed over decades of training and working together."<sup>1</sup> This is probably the area where interoperability is most developed amongst multinational defense alliances and particularly between EU and the US. Bilateral exchange programs, multinational headquarters, combined exercises and training within the NATO arena have done much to encourage the cross pollination of standard policies and procedures. In terms of political and cultural inter-operability, EU is well aligned with the US. The importance of these issue are recognized, and it is the intent of this chapter to develop these themes further concerning ESG and EAI training.

Through trial and error during the 1920's and 1930's, the USMC came to embrace the concept of amphibious warfare. It slowly gained the knowledge and experience to prosecute amphibious assaults in conjunction with War Plan ORANGE, should world events require. Similar to the 1920's and 1930's experimentation, today's amphibious nations must continually research ways to accomplish their mission of landing a force on a hostile shore. However, with the rise of a casualty aversion

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<sup>1</sup> Van Rijn W.J.E. (1999), *Interoperability – A Maritime Approach* (Naval Forces, 4/99), 12.



attitude in the western world, a plan for accomplishing this task with low casualties is paramount. Throughout the 1920's, 1930's, and World War II (WWII), training for and executing the amphibious assault revealed the US Navy lacked the necessary technology to successfully assault a defended beach. WWII showed that opposed amphibious assaults were extremely costly in both lives and equipment but offered important lessons for the future. Commandant General Alfred Gray in 1988 initiated discussion what Marines must do today to prepare for tomorrow. This led the Navy and Marine planners to abandon the tactic of frontal amphibious assaults and develop the STOM doctrine and necessary equipment to make such a landing feasible, even if it meant turning to the civilian market, as in the 1930's, to find the correct solution. By transforming itself from an amphibious force into an expeditionary force, the USMC replaced the mindset of assaulting fortified beaches with one of avoiding strong points in favor of penetrations in lightly defended areas.

The forward-deployed ESG with its embarked Landing Force (LF) is a uniquely organized, trained and equipped expeditionary force that is inherently sustainable, flexible, responsive and credible. The LF accomplishes this by providing four key capabilities: Amphibious Operations, Direct Action Operations,

Military Operations Other Than War, and Supporting Operations to include the introduction of follow-on forces.<sup>2</sup> The key to providing this forward presence/crisis response capability is speed. To plan and execute these missions, the LF undergoes an extensive Pre-deployment Training Program (PTP) that is outlined in Marine Corps Order 3502.3. "The MEU takes part in the PTP to build upon and enhance its conventional maritime capabilities."<sup>3</sup>

The PTP reinforces the development of the ARG/MEU team by providing standardization in five major areas: doctrine, organization, equipment, training, and procedures. During the PTP, the LF undergoes the Special Operations Certification Exercise (SOCEX). This exercise is an evaluation coordinated by the marine forces commander and forms the basis for certification of a LF as special operations capable.<sup>4</sup> It is the successful accomplishment of the required missions and demonstration of required capabilities. The rigor of time constraints and multiple concurrent missions also facilitates the evaluation of the ARG/MEU's execution of vectoring forces to the objective, Rapid Response Planning Process (R2P2), and related decision making cycle. The remainder of this chapter will focus on the PTP as a capstone for the missing-link of a

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<sup>2</sup> MCO 3120.9A (1997), 9.

<sup>3</sup> MCO 3502.3 (1995), 2.

<sup>4</sup> MCO 3502.3 (1995), 6.

combined training program within the EU amphibious community (multinational units/staffs) of the EAI.

Within the EAI the individual nations are responsible for the unit level readiness and operational training. At present, there is no integrated standardized training program available to educate, integrate and train the EAI as a combined force that synchronizes the processes from the intelligence gathering, planning and decision making process to the end result of projecting the force to the objectives. There is no certification process and the only platform where training is executed, is during exercises.<sup>5</sup> This situation is not acceptable and a way to change this for the future is to adopt a similar program as the PTP. Recognizing that mirroring a 26-week program is not achievable within the EU structure, the EU solution will have to be a realistic absolute minimum based on the required priority missions the EAI will execute. A good starting point to consider the necessary core capabilities of an EU LF is to review the associated US Mission Essential Task List (METL).

A historical review of US MEU participation in contingency operations since the program's inception provides a good starting point for an examination of the continued relevance of LF

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<sup>5</sup> Exercise DESTINED GLORY 2002 was the first opportunity for all five EAI members to work together since the initiative was launched. This annual NATO amphibious exercise is mostly conducted in the Mediterranean area.

capabilities. Figure 3 provides an overview of MEU operations from December 1983 to March 1999.<sup>6</sup>

Task Assigned	Number of Operations
Amphibious Withdrawals	2
Supporting Operations	7
Humanitarian Assistance/Disaster Relief	5
Peace Operations	7
Show of Force	10
NEO	9
Security Operations	3
Reinforcement Operations	1
TRAP	1
VBSS	1

**Figure 3: overview of MEU operations from December 1983 to March 1999.**

An examination of the operations conducted by the USMC's MEU's shows an overwhelming majority called for the MEU to conduct conventional operations with the majority of these being carried out by the battalion-sized LF.

Only two direct action missions were conducted during this period.<sup>7</sup> Obviously the ability to perform a task cannot be discarded simply because it has not been used in recent history.

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<sup>6</sup> This chart is a reproduction of data compiled by Headquarters Marine Corps PP& (POE-70) as background information for the FY00 MEU(SOC) Review.

<sup>7</sup> The first was a TRAP mission conducted on 8 June 1995 by the 24<sup>th</sup> MEU(SOC) while participating in Operation DENY FLIGHT. The other direct action mission was conducted by elements of the 31<sup>st</sup> MEU embarked aboard the *USS Dubuque* and *USS Germantown* and included unopposed boarding operations of various ships in the Gulf.

Conversely, the analysis must be focused on the capabilities that we train for and be prepared to delete those capabilities that are no longer relevant. Many factors must be considered when reviewing capabilities: the probability for the actual use of the capability, redundancy (is the skill or capability available from another ally), and the cost benefit relationship. The EAI should provide a forward deployed, flexible, sea-based LF. A LF capable of rapidly executing Amphibious Operations, designated Maritime Special Operations, Military Operations Other Than War, and Supporting Operations to include enabling the introduction of follow on forces. An overview of these, assumed EAI capabilities and Mission Essential Tasks is provided in figure 4 (see page 24).<sup>8</sup>

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<sup>8</sup> Based on MCO 3120.9B (DRAFT), 9 October 2000.

CORE CAPABILITIES	MISSION ESSENTIAL TASKS
Amphibious Operations	Advance Force and Pre-Landing Operations with specialized units  Amphibious Raid  Amphibious Demonstration  Amphibious Withdrawal
Maritime Special Operations	Direct Action Operations  Seizure/Recovery of Offshore Energy Facilities  Visit, Board, Search and Seizure Operations (VBSS)  Tactical Recovery of Aircraft And Personnel (TRAP)
Military Operations Other Than War	Peacekeeping and Peace Enforcement  (Limited) Security Operations  Non-Combatant Evacuation Operations  Humanitarian Assistance / Disaster Relief
Supporting Operations	Tactical Deception Operations  Fire Support Planning  (Limited) Coordination, and Control in a Joint/Combined Environment  Airfield / Port Seizure  Enabling Operations  Provide (limited) Command, Control, Communications, and Computers (C4)  Anti-Terrorism  Rapid Response Planning Process

**Figure 4: chart envisioned EAI capabilities and Mission Essential Tasks.**

"Willingness to embrace change is one of the US Marines' greatest strengths."<sup>9</sup> According to the 30<sup>th</sup> USMC Commandant, "We will study

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<sup>9</sup> ALMAR 023/99, 10.

our MAGTF training programs to determine whether we are preparing for the right number and type of missions.”<sup>10</sup>

Peacekeeping operations, Humanitarian Assistance/Disaster Relief, and NEO’s account for nearly 60% of the contingency operations conducted by expeditionary amphibious forces. Again, we cannot discount the need to train for a basic skill capability simply because it has not been required in recent history. At some point, given limited training time and assets, the EAI must focus training on the most likely and relevant capabilities and tasks.

In order to manage a “structured” European Amphibious Training Program (EUATP) and relevant capability schedule, an European Amphibious Training Branch (EUATB) that develops, organizes, and certifies the readiness training for the EAI participants should be established. This training branch should initially serve two basic functions that are crucial to the organization of the EUATP. First, the EUATB would discuss with EAI nations, designated battle staff(s), and representatives to determine the capabilities, tasks, and implied skills the individual nations would like to see emphasized. Via this method, the EUATB would customize the training modules. Second, the EUATB would draft the specific training plan for a LF based on the input from the (bi)national

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<sup>10</sup> ALMAR 023/99, 10.

liaison sections (UKNLAF, SIAF, and French AF) and the inputs of the EAI Battle Staff(s). The EUATB would be responsible for maintaining a training balance commensurate with the EAI capabilities advertised in the EU Strategy and Defense Policy.

The EAI reflects the ambition to become one of the premier forward deployed tools the EU can offer to NATO, an US Combatant Commander or for EU-led operations for the myriad of conflicts that may arise. However, the way we prepare the EU amphibious forces for these deployments has to improve dramatically and has to be structurally re-organized. The US PTP provides an excellent example how EU can develop its expeditionary amphibious training. EU owes its marines, sailors, and soldiers the best possible preparation for the challenges they will actually face.



## Chapter 4 - EQUIPMENT

Operational/technical interoperability of equipment arguably is the most difficult to achieve. Here the interface between operational capabilities and technical enablers offers cooperation between coalition partners and "determines whether units from different countries operating together can complete a mission."<sup>1</sup> Difficulties with US and EU technical interoperability were for example highlighted during Operation ALLIED FORCE when the most technically advanced of America's NATO allies could not operate air units with US air, adding firm evidence of a widening technical gap. As a direct result of the Kosovo campaign, NATO concluded that "it is critical for international military operations to have interoperable technology."<sup>2</sup>

This is probably a difficult area to get right for three reasons. First, nations' political and economic interests are reflected in their differing national procurement strategies. They must, therefore, reconcile the maintenance of their own defense-industrial base and minimize buying foreign equipments, which ultimately influences their ability and desire to invest in common equipments. Second, the complexities of the contemporary security environment have, in recent years,

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<sup>1</sup> Gause, 4.

<sup>2</sup> Book E.G. (2002), *Are Europeans Willing to Invest in Interoperability?* (National Defense, Vol 87, 589), 2.

resulted in ad hoc "coalitions of the willing" being formed by untraditional alliance partners who do not have experience of working together, a practice that has thus exacerbated interoperability problems. Finally, the astronomical cost of developing equipment programs, particularly C4ISTAR systems, partly explains the widening technology gap between the US and its allies.

At this point, it is worth mentioning the scale of interoperability. A force integrating at the operational level may be autonomous, and the minimum level of interoperability may be limited to higher command and information systems. Conversely, the lower the level of integration, the greater the need for more extensive and detailed arrangements. At this level, interoperability could refer to common ammunition, spares, fuel, and maintenance of common equipment. Generally, this seamless level of tactical inter-operability is probably unrealistic and arguably not necessary. Interoperability will never be perfect and, instead, a balance in spending is required to achieve acceptable levels of interoperability by sensible measures in design, procurement and force structures.<sup>3</sup> The US is aggressively pursuing new technologies to enhance its intelligence, information, communications, mobility, logistic

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<sup>3</sup> Cobbold R. (1997), *A Joint Maritime-Based Expeditionary Capability* (RUSI Journal), 27.

and fire support systems so that it can conduct OMFTS effectively within the next 5 to 10 years.

To optimize the ESG in the concept of EMW, the amphibious force has to be able to project power ashore via STOM. To realize this, key equipment programs have been identified and termed the "Amphibious Triad". This triad on which the Marine Corps is building its future amphibious capability, the Expeditionary Fighting Vehicle (EFV), the Landing Craft Air Cushioned (LCAC), and the Osprey MV-22 Tilt-rotor aircraft (MV-22) will be very expensive. The new equipments enhance current military capabilities by "extending the littoral battle space" but do not provide a revolutionary new capability in the EMW concept: "I can clearly say that neither system played any part in the drafting of the concept paper. Indeed, I fought long and hard to retain the wording that said something like: OMFTS does not depend on new equipment."<sup>4</sup>

So, what are the implications of all this new technology for EU and for the EAI? First, the EU concludes that doctrinal concepts should not necessarily rely on new equipments, which, should those systems fail to materialize, signal its premature end.<sup>5</sup> Second, if the former point is accepted, it should be

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<sup>4</sup> Interview with Major B. Gudmundsson USMC (Ret.) by Major Hayes on 31 January 2003.

<sup>5</sup> Oliver, 46.

possible to execute the concept in a limited way with current equipments. Finally, if new US equipments do not reflect a revolutionary change in capability, then more resource-constrained allies, such as EU, should be able to pursue a similar concept with more affordable systems. As the maneuverist approach applied to the land environment does not depend on any particular tank or aircraft, neither should it rely on specialist equipments when applied from the sea.

Nonetheless, EU cannot afford to stand still, and should invest in key enabling equipment to improve current capabilities. The new equipments will need to increase tempo and complement US expeditionary amphibious interoperability. Any reductions in tempo as a result of the coalition could result in loss of battlefield synchronization, with consequential increases in material and human costs and possible loss of political resolve.<sup>6</sup> To that end, what enhancements are envisaged for the EAI and how do they contribute to EU/US interoperability?

At present most equipment of the EAI is incompatible, notably in the complex area of amphibious specialized shipping, STOM assets, logistics, and Command & Information Systems (CIS) where compatibility is essential for unity of command, unity of

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<sup>6</sup> [www.randd.org/publications/MR/MR1235/MR1235](http://www.randd.org/publications/MR/MR1235/MR1235) , chapter 2.

effort, and mutual support.<sup>7</sup> Currently, even simple things such as docks and landing craft, single fuel concept, pallet system or CIS for all EU amphibious forces differ radically. Here the old problem of EU defense industry shows its face: developing common EU defense equipment only gets support as long as this development will result in orders for the national industry.

If the EAI adopts modern amphibious doctrine such as EMW, current EAI forces also show a serious equipment shortfall. EAI lacks integrated (satcom/data/secure) CIS facilities, STOM assets and, especially, its own air. The EAI forces generally have little aircraft deck space and no escort or offensive air to speak of. EMW assumes a large air portion to amphibious operations, especially since distances from ships to objective are getting larger and larger in the OTH concept. This requirement for air assets means that the EAI will have to fall back on its allies or sister services, which will not contribute to intensive integrated training and amphibious material compatibility.

EU has aimed to build its own amphibious forces.<sup>8</sup> In November 1998, the Spanish-Italian Amphibious Force (SIAF) was established. It comprises a battalion group from each nation

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<sup>7</sup> See Appendix C for EAI Platforms Capability Matrix.

<sup>8</sup> See Appendix B.

and new specialized shipping. Spain is currently building up its amphibious capability (including the possible use of medium to heavy-lift hovercraft and the 25,200-ton multipurpose amphibious assault ship to be delivered in 2008) to become the most powerful Mediterranean country in this respect. There is no doubt that Spain is "ready and obliged to take on a greater defense role."<sup>9</sup> SIAF has now two Spanish and three Italian Landing Platform Dock (LPD), two Spanish Landing Ships Tank (LST), and the Italian carrier *Garibaldi* fitted as fleet flagship and equipped for joint task force command and control. Italy has considered the procurement of a fourth *San Marco*-class LPD, but the Naval Staff now favors the acquisition of a larger multi-role ship combining both fixed wing carrier aviation and amphibious capabilities. This ship, the *Andrea Doria*, will enter service in 2007.<sup>10</sup>

The European Maritime Force (EUROMARFOR) is a maritime task group, with elements from France, Spain, Italy and Portugal. Although an on-call maritime joint force and not an amphibious force, it could support a landing force as surface combatants for operations in the European Southern region.<sup>11</sup> From the four participating nations, only Portugal has a very

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<sup>9</sup> Ewen Southby-Tailyour, *Jane's; Amphibious and Special Forces*. (Coulson: Sentinel House, 2004), 604.

<sup>10</sup> Southby-Tailyour, 326.

<sup>11</sup> Grimes, Vincent, Richard Scott & Mike Wells (1997), *Amphibious Advancement* (Jane's Navy International Vol. 102, 9/97), 32.

limited amphibious capability of one vintage Landing Craft Tank (LCT), capable of carrying 350 tons. However, this will change with Portugal's procurement of an Enforcer type LPD, which will increase its amphibious lift capacity significantly.<sup>12</sup>

France's amphibious fleet and capability is able to conduct and support expeditionary warfare anywhere she likes.<sup>13</sup> Her amphibious shipping is capable of lifting a brigade-size force. Her four LPDs could be escorted, if necessary, by an aircraft carrier in the Landing Platform Helicopter (LPH)-role. The helicopter plays an important role in current French expeditionary doctrine. French MOD has proposed two 20,000-ton LHDs, each capable of carrying 16 medium-lift helicopters and four landing craft to land vehicles and heavy equipment.<sup>14</sup> Both LHDs will replace the two older LPDs *FS Orage* and *FS Ouragan*.

The UKNLAF is recognized as the benchmark for amphibious collaboration and is a longstanding example within Europe.<sup>15</sup> At present, the UKNLAF is the only amphibious collaboration in which doctrine, equipment, and command and control systems are compatible, and in which the force operates and functions as a coordinated entity. What started with the integration of one

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<sup>12</sup> The Enforcer is Royal Schelde's modular ships design.

<sup>13</sup> See Appendix B.

<sup>14</sup> Southby-Tailyour, 200.

<sup>15</sup> See Appendix B.

troop of the Royal Netherlands Marine Corps (RNLMC) into a Royal Marine Commando in 1973 grew to become a brigade-size force of four battalions or commando's with combat and logistic support. The amphibious shipping consists of a LPH, three LPDs, with a fourth to be commissioned in 2007, and five Landing Ship Logistic (LSL), soon to be replaced by four Bay-class Landing Ship Dock (LSD). The Bay-class LSD is the modular Enforcer type; therefore, it resembles HNLMS *Rotterdam* and the new Dutch LPD, *Johan de Witt*.

Although the amphibious shipping within the EAI is significant, it lacks a dedicated command and control platform. The chances of seeing such a ship in service appear more than remote. For the immediate future, the new LPDs will at least provide a reasonable capability in this area.<sup>16</sup> However, the area of CIS interoperability is absolute worrying. The level of US investment in research and development of emerging capabilities in this area is vast and outstrips any other nation in this field.<sup>17</sup> The advantage in any conflict is seen to lie in advanced technology, especially in areas of information superiority. Information technology will provide a near real-time picture of the evolving conflict situation, allowing commanders to rapidly deploy lethal force at a high operational

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<sup>16</sup> The new Dutch LPD *Johan de Witt* (in service 2007) will provide an enhanced CIS capability.

<sup>17</sup> \$48.7 billion was allocated in 2002 for R & D (10 times larger than that of NATO Europe).  
[www.rdmag.com/features](http://www.rdmag.com/features).



tempo to achieve operational effect. In essence, this is what is meant by a Network Centric Warfare (NCW) and is an essential element of EMW. The US Joint Vision 2010 recognizes the reality and implications of technical change. Conversely, failure to understand and adapt could lead today's militaries into premature obsolescence.<sup>18</sup> The area of technical CIS interoperability is essential but complex and wide-ranging, therefore considered outside the scope of this paper.

Another contemporary area of weakness within the EAI is its STOM capability.<sup>19</sup> There are enough traditional landing craft available to conduct an old-fashioned ship-to-shore movement, but there is a huge lack of fast surface lift, land mobility, and aviation lift. This will affect not only the ability to launch the required force levels but also restrict the capacity to support the force from a sea base.<sup>20</sup>

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<sup>18</sup> US Joint Vision 2010, 11.

<sup>19</sup> STOM translates in Dutch as 'STUPID' so maybe that is why this subject seems to be neglected.

<sup>20</sup> On the UKNL side the Sea King medium transport helicopter is due to be replaced by the NH90 and the Support Amphibious Battlefield Rotorcraft (SABR) in circa 2012.

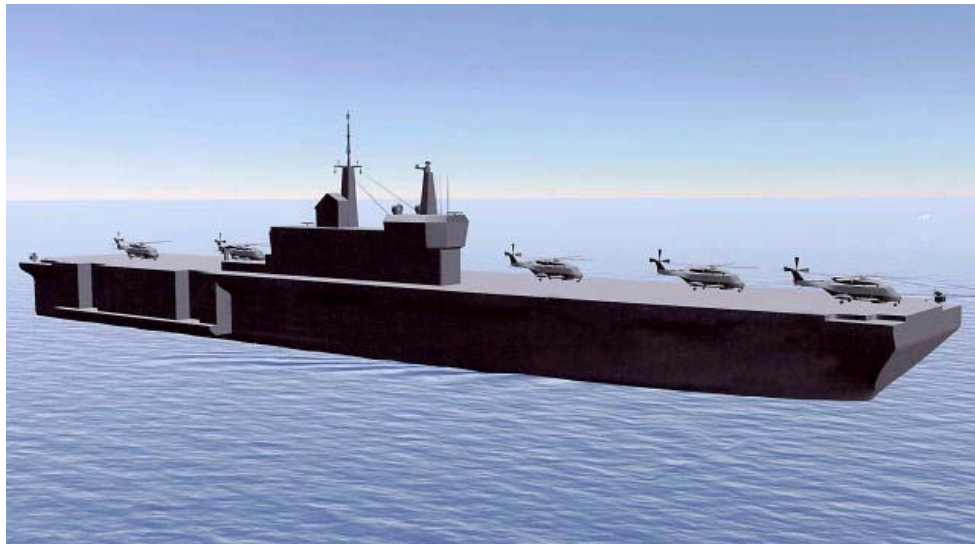
In sum, whilst it is recognized that the EAI will not have commonality of equipment with the ESG, with the notable exception of the JSF, current and future developments in the EAI will help it deliver within the EMW concept and thereby remain in step with the US in high intensity amphibious operations. It is not necessary, affordable, or even desirable for the EAI to have identical equipments to the US, so long as forces are complementary and able to deliver decisive effects at a comparable operational tempo. The US also must ensure that its technological transformation does not isolate it from allies, forcing it only to operate unilaterally, with far-reaching consequences for all. "Over time, it is hoped that the exchange of information between allies will help advance systems interoperability."<sup>21</sup>

All reforms the EAI realizes within the EU amphibious collaboration are clearly demonstrating the importance placed on expeditionary amphibious forces and strategic sealift. Improvements are made in capital equipment such as amphibious ships, Command and Information Systems, and STOM assets to project and sustain an embarked amphibious force, roughly equivalent to an ESG. With already credible EAI amphibious packages in place, these improvements will result in a full

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<sup>21</sup> Gause, 17.

operations capable, completely interoperable, and integrated EAI by 2011.



**Figure 5: Proposed French *Mistral* Class LHD**

## Chapter 5 - SUPPORT

In its simplest sense, supportability means the degree to which various military organizations or individuals can aid the cause, policy, or interests to achieve a common goal, and, can provide standardization, integration and cooperation. This definition includes political interoperability and cultural interoperability.<sup>1</sup> At the grand strategic level, political interoperability is critical for coalition building and its subsequent cohesion. It "defines why and how each country conducts military operations."<sup>2</sup>

At first glance, the Clausewitzian dictum stating that "war is not a mere act of policy but a true political instrument, a continuation of political activity by other means" suggests that states must have similar political interests and values to serve in order to form a successful coalition.<sup>3</sup> Although such similarity may often be the case, there will be times when nations' political rationales for engaging in hostilities vary. A contemporary example of this was during the early deployment of UK and US forces to the Gulf in the spring of 2003.

It was clear here that the US was at least aiming to disarm Saddam Hussein of WMD, but also, robustly advocating a

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<sup>1</sup> Gause, 3.

<sup>2</sup> Gause, 4.

<sup>3</sup> Handel M., *Masters of War: Classical Strategic Thought* (Portland: Frank Cass, 1996), 68.

regime change in Iraq and planning a campaign to destroy his regime. The EU was less sure in this respect. While UK Prime Minister Tony Blair stood shoulder to shoulder with Bush, the UK Prime Minister was, together with a few EU political leaders, more hawkish on the issue of regime change. This tends to indicate that it was to be in Britain's wider political interest to maintain and strengthen the "Special Relationship" by aligning itself with the US over this issue, despite possible differing political objectives or EU vision.<sup>4</sup> The US recognizes this interdependence and is able to utilize it accordingly, as was highlighted in the *Washington Times*: "it remains in London's best interest to look towards Washington and not Brussels in order to maximize its power."<sup>5</sup> At the highest level, therefore, nations must be willing and able to organize themselves to accommodate each other's political interests if they are to form effective coalitions and thereby achieve political interoperability.

The nexus of political interoperability is cultural interoperability, which is simply defined as: "commonality of military culture which had developed over decades of training and working together."<sup>6</sup> This is probably the area where interoperability is most developed amongst multinational

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<sup>4</sup> "Why Britain will fight in Iraq" (The Washington Times, 31 January 2003).

<sup>5</sup> *Ibid.*

<sup>6</sup> Van Rijn, 12.

defense alliances and particularly between the EAI nations and the US. Exchange programs, multinational headquarters, combined exercises and training within the NATO arena have done much to encourage the cross pollination of standard policies and procedures. While the importance of these issue are recognized, it is not the intent of this paper to develop these themes any further. Still the question remains is this important?

First, at the strategic level, if the coalition is going to be militarily meaningful, then all contributors must be able to offer military forces that are able to operate alongside each other and contribute effectively to the operational objective. To take this point to its natural conclusion in the case of the ESDP, having invested heavily in an expeditionary amphibious capability, the EAI nations would resent their forces being regarded as only capable of conducting "second order" tasks within a coalition.

This does not mean that the EAI has to mirror-image the US but it must contribute in the arena of "high demand - low density items" such as mine clearing, Explosive Ordnance Disposal, advance force operations locating the required gaps in the opponent's coastal defense (recon- pull), shaping the battlefield by conducting pre-landing operations and raids in

order to enable the projection of US forces ashore, and conduct amphibious demonstrations as part of a deception plan.

Last, the integration of EAI forces in the US amphibious arena is going to be costly, whatever degree of integration involved. This raises the question of political backing of the EAI concept. Cost in this context refers to manpower as well as finance. The need for a standing headquarters that can organize units from a force pool into an effective amphibious formation requires permanent posting of highly trained and therefore scarce personnel. Finance is another subject to consider because the need to overcome the problems of material incompatibility necessitates the expensive replacement of current capital equipment.

### **Manpower demands**

After the signing of the EAI, the British Royal Marines promptly reorganized its headquarters and developed a deployable "two-star headquarters" for EU amphibious forces, clearly demonstrating a willingness to provide the EAI with military leadership.<sup>7</sup> It is not hard to imagine that for the success of this headquarters all countries need to augment it with experienced "amphibiots". These amphibious-trained people are still rare in EU! This fact forces countries to choose

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<sup>7</sup> Julian Lindley-French, (2002), *Fighting Europe's Wars The British Way: The European Politics Of British Defense Doctrine* (R.U.S.I. Journal, 4/02), 74 -76.

between hanging onto their people for national tasking, or sending them to the standing staff and letting them play a vital role in the EAI process. At present the EAI nations can generate three high readiness (5-30 days) Amphibious Forces (AF) based around brigade-sized landing forces with a sustainability rate of 10-30 days. These forces are the French AF; the Spanish/Italian AF (SIAF), and the United Kingdom & Netherlands AF (UKNLAF). The EAI generates a total AF of approximately 15,000 men with possibilities to task-organize in diverse battle-groups for specified amphibious missions. A lot of work still awaits to fully integrate all the individual national parts into a fully integrated, centrally commanded, and compatible amphibious force. Notwithstanding the last point, the building blocks of the EAI (UKNLAF, SIAF, and the French AF) are kept in high readiness and can deploy when necessary.

### **Financial demands**

To give the EAI a fair chance of success, most of the material problems have to be solved in the near future. EDSP recently concluded that Europe shows a significant shortfall in "strategic transport capabilities."<sup>8</sup> Luckily, many EU navies plan to acquire new and more compatible amphibious platforms.

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<sup>8</sup> North Atlantic Treaty Organization (2002), *Strengthening European Security And Defense Capabilities* (NATO fact sheets, December 2000), 23.



The solution to the absence of a single CIS and a common logistic distribution system for the EAI is further away. The UK's willingness to provide leadership will probably not extend to bearing the financial burden of developing these systems. Such developments will inevitably need to be funded by all the partners, which have other national obligations as well. The demographics of an aging European population do not bode well for further defense expenditures, and domestic regional and employment priorities in many states constrain governments from moving away from the static land force structure of the Cold War towards a lighter, more mobile force. Pitted against these priorities, which immediately influence national interests, in EU the defense budget often has a low priority despite the political will to cooperate internationally.

**Credibility**

A lot of work has been done since the EAI has been launched on 5 December 2000. It will take time for the Initiative to take full effect, but the participants aim to progressively demonstrate improvements in EU amphibious capability over the coming years. While a number of meetings and seminars of the EAI steering and working groups have been able to make progress on many of the issues, the next key step is to conduct live amphibious exercises together. There is no doubt that progress on the EAI has been slower than originally

anticipated by the nation's ministers of defense, but this has been due to the heavy commitment of the landing forces (land component of the amphibious force) in their "second-land-army role" to real world operations in Afghanistan and Iraq. Although frustrating for the Initiative, the reality that multi-purpose amphibious forces continue to be at the forefront of any (rapid) response force underlines the utility and the need for supportability, of such capability.<sup>9</sup>



**Figure 6: UK Royal Marines in action in Iraq**

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<sup>9</sup> Kujat, H., Chairman of the North Atlantic Military Committee, and Hagglund, G., Chairman of the EU Military Committee in a written recommendation to the EAI, Dec 2003.

## CONCLUSION

The last decade has seen significant changes in the conduct of warfare, and there is nothing to suggest that the next will be any different. What is more certain is that the EU will remain a key ally of the US and that its members geo-strategic interests will probably become even more aligned than at present, resulting in the need for their forces to work closely together in the future. If the fruits of this partnership are to be fully realised, then it will be essential for all nations to ensure their forces are interoperable. This paper has suggested that interoperability between allies is not just limited to considering mutually compatible technical equipment, but instead, involves a wider explanation using the pillars of **DOTES**.

Doctrine is fundamental and requires mutual conceptual and doctrinal interoperability, which sets the vision of how forces intend to think and thereby intend to operate. Between the EAI nations and US amphibious forces this is probably the most developed area, with similar thinking and development of operational concepts that are largely compatible; this bodes well for long-term convergence. From this start point, operational and technical interoperability can be developed, where concepts can be turned from the art of the probable to the art of the possible.

In an era of accelerating **O**rganizational changes, due to budget cuts and military downsizing, the reform to efficient and effective force structures that can be deployed rapidly is necessary. However, the development of new concepts should be realistic and result in operational missions that are achievable and can be developed in contemporary training programs and mutual exercises.

At present, there is no integrated standardized **T**raining program to train the EAI as a combined force, to synchronize the intelligence gathering, planning, and decision making process. In addition, there is no certification process to validate operational readiness and the only platform where training is executed, is during exercises. The lack of training and certification is not acceptable considering the fact that training military personnel and validation of readiness is recognized as a key element of a professional force. This situation should be corrected immediately.

Technical **E**quipment changes might be arguably the most difficult to achieve. The development of new concepts should not rest on expensive "pie-in-the-sky" equipments, which, should they fail to materialise, signify disaster for the concept. Instead, the new approach should represent a change in "mindset" encouraging commanders to think differently, to improvise with current capabilities and to remain flexible in order to apply the

tenets of the maneuverist approach to the littoral environment. Equally, complete commonality of equipment between nations is "nirvana" and probably unachievable for financial, domestic, and political reasons. What is important is to have complementary capabilities allowing mission execution at a comparable operational tempo.

Additionally political and cultural interoperability is essential for the supportability of a coalition to form, and to ensure its subsequent cohesion. The close political and cultural ties of EU and the US have encouraged exchange programs, military education programs, and exercises leading to a large degree of assimilation and improvements to cultural interoperability.

Furthermore, the EAI nations do not need to match US amphibious forces in technical prowess, provided that they are sufficiently capable to play on the same team. The EAI nations are receiving significant enhancements to its capabilities across all areas that should meet this goal. In the realm of technical interoperability, particularly in CIS, a degree of pragmatism will be required. It has been shown that the EAI nations are moving in the right direction, but it is unrealistic to think that they can keep up with US technological innovation. Instead, practical solutions will be required to ensure technological problems are solved. Moreover, the US cannot afford to be complacent and develop its technologies in isolation. If the US

wants, and needs, to work in a productive coalition, then it will need to meet its allies halfway. Sharing technology, carefully accepting a limited reduction in capability when the threat allows, procuring equipment in a consultative and collaborative way will be the only way to improve interoperability.

Ultimately, failure to develop interoperability between its allies will result in the US having to absorb the cost of coalition interoperability shortfalls. The question remains, how much and for which allies, will the US be prepared to pay for interoperability? The answer will probably provide an indication of the intent to which the US will wish to work within a coalition and who the partners of choice are going to be.

The fact remains that the 5 current EAI nations lack force conformity, they differ in background and doctrine, and because of industrial interests have incompatible material. Although full integration would be desirable, difficult demands from different countries rule this possibility out. Perhaps the EAI can produce, rather than one integrated amphibious force, a force pool, elements of which can be deployed under the standing UK headquarters. Whether such a force pool will enable the EAI to deliver a permanent European Amphibious Ready Group, similar to the US ARGs or even an evolution further the US ESGs is doubtful. The crux seems to be on whether the US wants to work with the EAI, or more importantly, whether the US has the "will" to make

it happen? Based on political, cultural, and technological interoperability, handpicked amphibious forces of the EAI and their proven consistency might offer a valuable basis for a coalition in future amphibious operations. In operations other-than-war, the Europeans will undeniably augment and enhance any US-led amphibious force; however, in high intensity operations much will depend on the mission. Ultimately, the US will need to assess the threat and if the benefits of working in a coalition outweigh the operational risks, then it will undoubtedly mitigate against any perceived weaknesses in interoperability. However, if the risks outweigh the benefits, then the EAI will probably be relegated to fulfil "second order" tasks. Essentially, the extent to which the EAI is able to operate with the US will depend on the US.

Notwithstanding this, the EAI is transforming itself in a integrated, compatible, and credible entity to ensure that it becomes relevant to future amphibious operations around the timeframe of 2011. From this respect, it is possible to conclude that, at least for now, handpicked amphibious forces of the EAI will undoubtedly continue to ensure that its limited capability is assessed as more of an asset than a liability and guarantee that it is able to operate the "American Way", as the partner of choice, alongside the ESG for any future amphibious operation.

## Appendix A

### EXPEDITIONARY STRIKE GROUP

At present, the standard Amphibious Ready Group (ARG) is composed of three amphibious ships: an Amphibious Assault Ship (LHA/LHD), an Amphibious Platform Dock (LPD), and a Dock Landing Ship (LSD). The amphibious ships form the sea base for the embarked landing force complete with command and control facilities, their logistics, and STOM-assets.



LHA/LHD



LPD



LSD



LCAC



LCU



RHIB

Figure A-1: Standard Amphibious Ready Group

The standard ARG has either a *Tarawa*-class (LHA-1) or a *Wasp*-class (LHD-1). The *Tarawa*-class has helicopter, vertical / short take off (V/STOL) and vertical take-off and landing (VTOL) capability. Its well deck handles both Landing Craft Air Cushion (LCAC) and conventional landing craft such as the Landing Craft Utility (LCU). It embarks 1,713 troops, store 105,900 cubic feet of cargo and ammunition, and 25,400 square feet for vehicles. This ship or the assigned LHD is the



command center of the present ARG. The *Wasp*-class is the newer and improved version of the LHA. While both classes of ships possess similar missions and capabilities, the *Wasp*-class possesses expanded command and control systems and medical facilities. The *Wasp*-class can embark 1,892 troops and has storage capacity for 125,000 cubic feet of cargo and ammunition and up to 22,900 square feet for vehicles.

The Amphibious Transport Dock Ship is the *Austin*-class LPD. The *Austin*-class' purpose is to transport and land troops and equipment by landing craft, Amphibious Assault Vehicles (AAV), and helicopters. The *Austin*-class (LPD-4) has an additional ability to function as the primary control ship (PCS) for waterborne ship to shore movement. It has the capability to embark 788 troops and has 38,300 cubic feet for cargo and ammunition and 11,800 square feet for vehicles. It can also operate a variety of helicopter and AV-8 fixed wing aircraft.

The Dock Landing Ship comes in two variants, the *Whidbey Island* (LSD-41) and the *Harper's Ferry* (LSD-49). This class ship is primarily designed to support landings using LCAC but also has the ability to operate helicopters and conventional landing craft. Its capacity to embark four LCAC is the largest of any Navy platform. The LSD-41 class can embark 454 troops and has 5,100 cubic feet for cargo and ammunition and 13,500 square feet for vehicles. While both ships can serve a primary

control ship, the major difference in the two variants is the LSD-49 class has a reduced well deck area that only has the capacity for two LCAC but the storage area for cargo and ammunition is increased to 50,700 cubic feet and 16,900 square feet for vehicles.

The structure of the ESG adds three surface combatants, a maritime patrol aircraft, and a submarine to the existing ARG ships. The surface combatants include an *Aegis*-class Cruiser, an *Aegis*-class Destroyer and a *Perry*-class Frigate.



DDG-51



CG-47



FFG-7



688



OILER

**Figure A-2: Surface combatants and submarine ESG**

The addition of these assets significantly increases the operational reach of the ARG, which currently possesses only a limited defensive ability. The two *Aegis*-class ships, the Cruiser and Destroyer, provide air defense, strike, anti-surface warfare, and anti-submarine warfare capabilities.<sup>1</sup> The assigned *Perry*-class frigate also provide anti-air, anti-surface, and anti-submarine

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<sup>1</sup> Steve Richter, Commander, USN (2002), *A new idea for a new world* (Surface Warfare, Fall 2002), 14 -19.

warfare capabilities, but has no strike weapons. The key to this ESG configuration is the significant increase to operational combat power. As a force, the ESG will have the following operational capabilities:

**Weapons** - Air Defense Engagements: 30, Guns (76MM or greater): 4, Acoustic Arrays: 3.

**Aviation** - Fixed Wing Aircraft: 6, Strike sorties/day: 18, Attack helicopters (AH-1): 4, Attack sorties/day: 19, Transport helicopters (UH-1/46/53): 20.



AV8B Harrier



CH53



CH46



AH-1

Figure A-3: Fixed wing and helicopters ESG

**ISR** - Crypto logic ESM: 6, Airborne Search Radar: 2-4, 3-D Air Search: 3.

**MIO** - Compliant/Non-compliant: 7, Non-compliant/Opposed: 2-5, SOF Capability, SEAL Platoons: 1-4, Force RECON PLT: 1, NSW RHIB Detachments: 1-2.<sup>2</sup>

Each of these assets perform distinctive functions and missions. The Landing Craft Detachment and Special Boat Unit (LCACs), allows troops to be rapidly transported to any area of responsibility and conduct amphibious landings with embarked landing craft in extensive littoral areas around the world. Next, Naval Special Warfare forces embarked in amphibious shipping provide special warfare capabilities to the theater commander but also to the ARG. This force can

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<sup>2</sup> Marcus Fisk, Captain USN. "Expeditionary Strike Force Concept. From...the Sea. The power of Team" brief presented at U.S. Marine Corps Command and Staff College, Quantico, 12 March 2002.

provide intelligence, surveillance, and reconnaissance in support of amphibious operations or conduct independent covert operations. Thirdly, the Tactical Air Control Squadron embarks upon the amphibious shipping to provide air traffic control and vectoring of aircraft in the Amphibious Objective Area (AOA) airspace. A Helicopter Control Detachment is assigned to assist with aircraft control and air space de-confliction. Another detachment is the explosive ordnance disposal detachment. This detachment is used to clear beach obstacles, and neutralize and detect mines. Finally, the Amphibious Beach Unit combined with elements of the construction Battalion (Sea Bees) are capable of performing traffic direction for vehicles at a landing site, clear paths for vehicles and landing craft, and most importantly, provide invaluable construction capabilities ashore. Additional to the capabilities provided by the naval assets, the Marine Expeditionary Unit (MEU) also brings significant capabilities and assets. These capabilities and assets include: a Command Element (Command / Control), Battalion Landing Team (the landing force supported by artillery, tanks, Light Armored Reconnaissance Vehicles, Amphibious Assault Vehicles, etc.), Air Combat Element (troop lift, command / control, attack helicopters, and Harriers), Combat Service Support Element (logistics, transport, medical), and the Marine Special Purpose Force.<sup>3</sup>

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<sup>3</sup> Brooks R. Brewington, Col USMC. "MEU(SOC) overview" brief presented at U.S. Marine Corps Command and Staff

**Landing Force Capabilities** - Battalion Landing Force: 2,300, Tanks: 4, Light Armored Vehicles: 16, AAV: 15, CRIC: 20, Artillery (155mm): 6.



BLT



AAV



CRRC



M1A1



LAR



Arty

Figure A-4: LF capabilities ESG

These capabilities allow the marines to operate as a Marine Air Ground Task Force (MAGTF) within the concept of the Single-Battle, and a capability to complete a wide range of (standardized) missions.

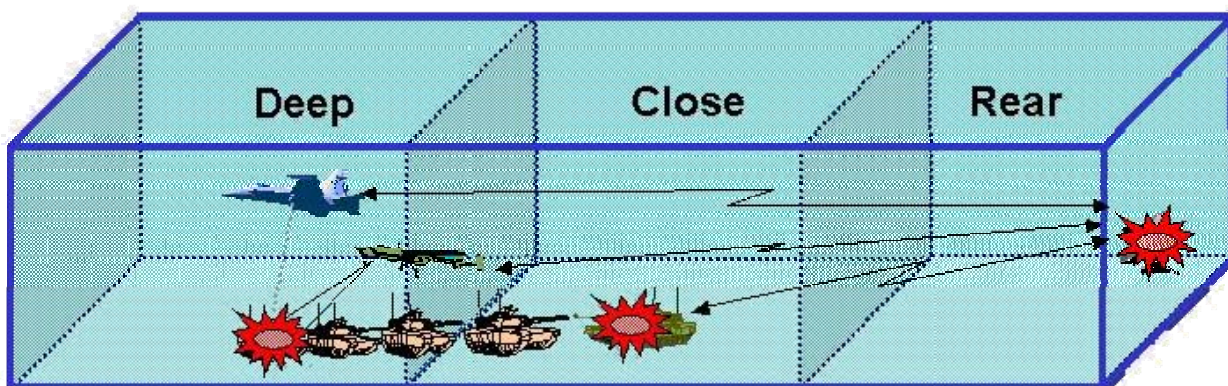
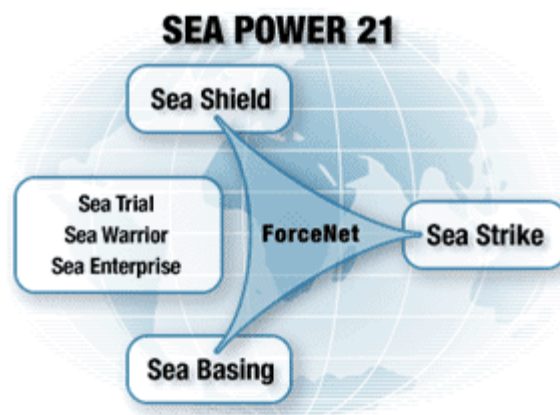


Figure A-5: MAGTF Single-Battle Concept

It needs no further explanation that by employing the ESG concept, the US Navy-Marine Corps Team significantly increases its operational reach throughout the world.<sup>4</sup> The ESG offers an increased operational agility and offensive capability, improved maritime interdiction, surveillance, undersea warfare, anti-air defense, improved force defense, and force protection capability (Sea Shield), expanded landing force and special warfare basing (delivery & entry from the Sea Base), and enhanced intelligence gathering network, Naval Surface Fire Support, and Strike Warfare (Sea Strike). The key to ESG success, and adaptation of the concept by EU allies, will be the validation of the significant increase to operational combat power and integrating these capabilities to enhance the amphibious expeditionary power projection.



**Figure A-6: ESG in line with SEA POWER 21**

The Navy-Marine Corps team brings significant warfighting capabilities to the ESG. The 'big deck' amphibious assault ship classes, LHAs and LHDs, the center pieces of the ESG, are

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<sup>4</sup> Brewington.

flagship-configured and have the requisite command and control spaces with significant connectivity bandwidth and capabilities. With excellent radar sensors, link interoperability, embarked intelligence and cryptologic assets, and the cooperative engagement capability, these ships have the potential to participate in a ForceNet-type 'networked and distributed combat force.'

The ESG concept is a powerful force multiplier. Unbiased experimentation and thorough analyses of lessons learned will help create revolutionary change to expeditionary naval and amphibious operations in the opening decades of this century. ESGs offer a means to ensure a fully capable, flexible, and global naval presence with capabilities for power projection from the sea.



## Appendix B

### EUROPEAN AMPHIBIOUS INITIATIVE

In December 2000, Spain, Italy, France, the Netherlands, and the United Kingdom launched the European Amphibious Initiative (EAI) to improve their capabilities in the amphibious area in accordance with NATO's Defense Capabilities Initiative. In the light of this Initiative the EAI seemed only a logical step forward and EU countries have undertaken projects to improve their amphibious capabilities, both unilaterally and cooperatively.

#### **Spanish-Italian Amphibious Force**

One of the co-operations is the Spanish-Italian Amphibious Force (SIAF), established in November 1998. SIAF is a brigade-sized force, which comprises of a battalion group from each nation and new specialized shipping. Spain is currently building up its amphibious capability (including the possible use of medium to heavy-lift hovercraft and the proposed 25,200 tons multi-purpose amphibious assault ship to be delivered in 2008). SIAF has at the moment two Spanish and three Italian Landing Platform Dock (LPD) and two Spanish Landing Ship Tank (LST) next to that the carrier *Garribaldi* is fitted as Fleet Flagship and is equipped for Joint Task Force Command and Control. Italy has considered the procurement of a fourth *San Giorgio*-class LPD, but the Naval Staff now favors the acquisition of a larger multi-role ship combining both fixed



wing carrier aviation and amphibious capabilities. This ship, *Andrea Doria*, will enter service in 2007<sup>1</sup>.



Galicia Class LPD



Newport Class LST



Multi Purpose Aslt Ship



Garribaldi Class



San Giorgio Class LPD



Luigi Einaudi Class LHA



LCU



LCM8

Figure B-1: SIAF Amphibious shipping and surface capability

*SIAF Aviation* - Fixed Wing Aircraft: AV8B Harrier, Attack/ Recce helicopters: AB-212, Transport helicopters: SH-3D.



AV8B Harrier



SH-3D



AB-212

Figure B-2: SIAF fixed wing and helicopters

*SIAF Landing Force Capabilities* - Brigade (minus) Landing Force: 2,300, Tanks: 4, Supercat and Barchini Vehicles: 16, AAV: 12-24, mortars Bty(120mm), Towed Bty Artillery (105mm).

<sup>1</sup> Southby-Tailyour, 326.



Bde(-) LF



M-60 SP



AAV



RCC - Barchini



AT vehicles TOW



Supercat

Figure B-3: SIAF LF capabilities

### France's Amphibious Force

France's amphibious fleet and capability is able to conduct and support expeditionary warfare anywhere she likes. The amphibious shipping is capable to lift a brigade size force. Her four LPDs could be joint, if necessary by an aircraft-carrier in the Landing Platform Helicopter (LPH)-role. The helicopter plays an important role in French expeditionary doctrine, this is emphasized by the two proposed 20,000 ton Landing Helicopter Dock (LHD), each of which will be capable of carrying 16 medium-lift helicopters and four landing craft to land vehicles and heavy equipment<sup>2</sup>. Both LHDs will replace the two older LPDs FS *Orage* and FS *Ouragan*.





Figure B-4: French Amphibious shipping

France Aviation - Fixed Wing Aircraft:, Attack/Recce  
helicopters: Gazelle, Transport helicopters: Cougar/Puma.



Figure B-5: French Fixed wing and helicopters

A twinning agreement was signed in 1995 between 3 Commando  
Brigade Royal Marines and the French 9eme Division d'Infanterie  
de Marine, which is the amphibious, light-armored element of  
the French rapid reaction force.<sup>3</sup>

<sup>3</sup> Southby-Tailyour, 40.



*France Landing Force Capabilities* - Brigade Landing Force: 2,300, Tanks: AMX10, Armored Vehicles: AMX13, Mortar Regt (120mm), Artillery Regt(155mm).



Bde LF



AMX10 Tank



AMX13 APC



Mortar Bty 120mm



Arty Bty 155mm

**Figure B-6: French LF capabilities**

#### **United Kingdom and Netherlands Amphibious Force**

The third co-operation within the EAI is the United Kingdom and Netherlands Amphibious Force (UKNLAF). The UKNLAF was established on 9 May 1973 with the signing of the Memorandum of Understanding by both nations and started a formation that was based on a single doctrinal and operational understanding and therefore effective and fully operational. This force, the UKNLAF, is recognized as the benchmark for amphibious collaboration and is a longstanding example within Europe. It grew to become a brigade-size force of four battalions or commando's and its combat and logistic support. The amphibious shipping consists of a Landing Platform Helicopter (LPH), three LPDs, with a fourth to be commissioned in 2007, and five

Landing Ship Logistic (LSL), soon to be replaced by four *Bay*-class Landing Ship Dock (LSD). The *Bay*-class LSD is the modular Enforcer type, therefore it has a lot of resemblance with HNLMS *Rotterdam* and the new Dutch LPD, *Johan de Witt*. The modular Enforcer-concept enabled the UK to shift from the service life extension program for the 30-year old LSLs to the procurement of new built ships in a very short time, when it became evident that the program would cost too much.<sup>4</sup> While the UK brought the blueprints for their new LSDs from the Netherlands, the Dutch consider to buy either the blueprint or the British Landing Craft Vehicle and Personnel (LCVP) Mark V itself, to replace her old LCVPs.



**Ocean Class LPH**



**Fearless Class LPD**



**LPD(R)**



**LSL**



**LSD(A)**



**STUFT**

**Figure B-7: UKNL Amphibious shipping (part 1)**

<sup>4</sup> Joris Janssen Lok & Richard Scott (2002), *Amphibious lift bound by a common thread* (Jane's Navy International, 1/02), 64.



Mexifloat



LCU UK



LCVP UK



Light Hovercraft



RRC



IRC



Rotterdam Class LPD



LCU NL



LCVP NL

Figure B-7: UKNL Amphibious shipping (continued)

UKNL Aviation - Fixed Wing Aircraft: AV8B Harrier, Attack/ Recce helicopters: Lynx and Gazelle, Transport helicopters: SK/CH47 (future: NH90/EH101/FASH/SABR).



AV8B Harrier



SK MkIV



CH47



FASH / SABR



Lynx TOW



Gazelle



WAH64D



NH90

Figure B-8: UKNL Fixed wing and helicopters



*UKNL Landing Force Capabilities* - Brigade Landing Force:  
2,300, Light Armored Amphibious Vehicles: Viking and Patria,  
mortar Battery (120mm): 6, Artillery (105mm): 6.



**Bde LF**



**Bde LF**



**Viking**



**Patria NL**



**Mortar Bty 120mm**



**Arty Bty 105mm**

**Figure B-9: UKNL LF capabilities**

As a force, the EAI has the potential of a landing force at divisional strength. In 2006, the EU amphibious force will consist of two Landing Helicopter Docks, one Landing Platform Helicopter, ten Landing Platform Docks, four Landing Ship Docks, three Landing Ship Tanks and one updated Landing Ship Logistic. A considerable force, especially when one takes into account the fact that before 2010, more Landing Platform Docks will be added as well as multi-role aircraft carriers, and that the 'outdated' amphibious helicopter force will be replaced by new and more capable medium transport helicopters.

# Appendix C

## EAI Platforms Capability Matrix

Platform/Country	Planning speed (knots)	Command suite	Range - nm (cruising speed)	Load (tonnes)	LIMs	Embarked Pax	Days of Supplies (DOS)	Fuel - AVCAT (F44) (m3)	Fuel - Marine Diesel (F76) (m3)	Beaching capability	Sea State limitations	Helo spots	Helos compatible	Surface Assault - Ships Craft
<b>NETHERLANDS</b>														
Rotterdam LPD	17	Bn level	8600	2500	375	611	30	240	1250	N	4	2	Sk, Gaz, Lynx NH 90, EH 101	2 x LCU 2 x LCVP
<b>UNITED KINGDOM</b>														
Fearless LPD	14	Bde	7500		300	250	30	274	2365	N	4	2	Gaz, Lynx, SK EH 101, CH 47	4 x LCU Mk 9 4 x LCVP Mk4
Ocean LPH	15	Cdo	8000		277	500	42	1540T	1554T	N	4	6	Gaz, Lynx, SK EH 101, CH 47	4 x LCVP Mk 5 5 x MIBs
Sir Geraint LSL	14	N	8848	2141	444	12	30	4	850	N	4	1	Gaz, Lynx	
Sir Percival LSL	14	N	8848	1400	340	294	30	4	850	Y	4	1	Gaz, Lynx	
Sir Bedivere LSL	14	N	18816	1758	480	337	30	59	1087	Y	4	1	Sk, Gaz, Lynx	
Sir Tristram LSL	12	N	10729	2146	473	328	30	67	1018	Y	4	1	Sk, Gaz, Lynx	
Sir Galahad LSL	11.5	N	11088	3009	517	339	30	13	1490	Y	4	1	Sk, Gaz, Lynx	
Fearless ATS/PCRS	15	N	8000	15070m2	1108	40	40	132	3760	N	6	5	Gaz, Lynx, SK	
Fort Austin	13.5	N	12960	20043	NA	250	NA	2	2400	N		1	Gaz, Lynx, SK EH 101, CH 47	
Fort Rosalie	13.5	N	12960	20043	NA	250	NA	2	2400	N		1	Gaz, Lynx, SK EH 101, CH 47	
<b>FRANCE</b>														
Batral Francis Garnier LST	12	N	5200	315	80	138	10	NA	90	Y	3	1		1 x LCVP 1 LCPS
Batral Champlain LST	12	N	5200	315	80	138	10	NA	90	Y	3	1		1 x LCVP 1 LCPS
Batral La Grandière LST	12	N	5200	315	80	138	10	NA	90	Y	3	1		1 x LCVP 1 LCPS
Batral Dumont d'Urville LST	12	N	5200	315	80	138	10	NA	90	Y	3	1		1 x LCVP 1 LCPS
Batral Jacques Cartier LST	12	N	5200	315	80	138	10	NA	90	Y	4	1		1 x LCVP 1 LCPS
Foudre LPD	16	Bde	11000	1800	768	416	30	207	1700	N	4	3	Sk, Gaz, Lynx NH 90, EH 101	1 CDIC + 4 CTM or 8CTM
Siroco LPD	16	Bde	11000	1800	768	416	30	207	1700	N	4	3	Sk, Gaz, Lynx NH 90, EH 101	1 CDIC + 4 CTM or 8CTM
Ouragan LPD	13	Bn	8500	1500	680	356	30	113.5	1000	N	4	2	Sk, Gaz, Lynx NH 90, EH 101	1 CDIC + 4 CTM or 8CTM
Argo LPD	13	Bn	8500	1500	680	258	30	113.5	1000	N	4	2	Sk, Gaz, Lynx NH 90, EH 101	1 CDIC + 4 CTM or 8CTM



# Appendix C

## EAI Platforms Capability Matrix

### ITALY

San Giusto LPD	14	Bde/Bn	8500	1000	100	330	20400(*)	82	1000	N	3	1	Sk, Gaz, Lynx	3xLCM, 3xLCVP
													NH 90, EH 101	1xLCPL
San Giorgio LPD	14	Bde/Bn	8500	800	100	330	20400(*)	250	993	N	5	4	Sk, Gaz, Lynx	3xLCM, 1xLCPL
													NH 90, EH 101	2 + 1*LCVP

### SPAIN

Galicia LPD	12	Bn	7,500	2570	375	615	30	275.5	1,139.60	N	4	2	Sk, Gaz, Lynx	4xLCM-8
													NH 90, EH 101	
Castilla LPD	12	Bde	7,500	2570	375	760	30	260	1,089.00	N	4	2	Sk, Gaz, Lynx	4xLCM-8
													NH 90, EH 101	
Pizarro LST	12	N	18,000	2000		431	45	68	1,387.38	Y	2-3	1	CH-46, AB 212	2 x LCPL
													SH3D	
Cortes LST	12	N	18,000	2000		431	45	68	1,387.38	Y	2-3	1	CH-46, AB 212	2 x LCPL
													SH3D	

## Bibliography

### Books

Dorman A., Smith M.L. and Uttley M.R.H. *The Changing Face of Maritime Power*. New York: St. Martin's Press Inc., 1999.

Evans M.H.H. *Amphibious Operations - The Projection of Sea Power Ashore*. Vol 4, Brassey's, 1990.

Gatchel Theodore L. *At the Water's Edge*. Annapolis: Naval Institute Press, 1996.

Grove E., Hore *Dimensions of Sea Power - Strategic Choice in the Modern World*. Hull: The University of Hull Press, 1998.

Handel M. *Masters of War: Classical Strategic Thought*. Portland: Frank Cass, 1996.

Krulak V.H. *First to Fight*. New York: Pocket Books, 1984.

Roney, Alex. *EU Fact Book, Fifth Edition*. London: Kogan Page Ltd, 1998.

Southby-Tailyour, Ewen. *Jane's; Amphibious and special forces*. Issue 11, Coulsdon: Sentinel House, 2004.

Speller Ian, and Tuck Christopher. *Amphibious Warfare: strategy and tactics*. London: Amber books, 2001.

Till G. *Sea Power: Theory and Practice*. Ilford: Frank Cass & Co. ltd., 1994.

Till, Geoffrey ed. *Seapower at the Millenium*. London: Phoenix Mill, 2001.

## Articles

Annati, Massimo (1999), *The Renaissance of Amphibious Warfare* (Naval Forces, 5/99), 8-13.

Beddoes, M.W. (1997), *Logistical Implications of OMFTS* (Naval War College Review, Vol L, No4), 32-48.

Binnendijk H., Kugler R. (2002), *Transforming European Forces* (Survival, Vol 44, No3).

Book E.G. (2002), *Are Europeans Willing to Invest in Interoperability?* (National Defense, Vol 87, Issue 589), 1-5.

Bourne, J. (2002), *Collaboration by European Amphibious Forces - the way ahead?* (Naval Forces, 5/99).

Chisholm, John (2002), *Spelling it out - Amphibious warfare* (Defense Review), 30-31.

Clark, Vern, Admiral, Chief of Naval Operations (2002), *Projecting Decisive Joint Capabilities* (Proceedings, October 2002).

Cobbold R. (1997), *A Joint Maritime-Based Expeditionary Capability* (RUSI Journal), 23-30.

*Commentary on OMFTS* (Marine Corps Gazette, 7/96), 13-15.

Cusack N.J. (2003), *Ship-to-Objective Maneuver: SEA DRAGON 04 C2 Architecture* (Marine Corps Gazette, 1/03), 28-30.

Dalton J.H., Boorda, Mundy (1994), *Forward...From the Sea* (Proceedings, 12/94), 46-49.

Dawson, Cutler, Vice Admiral and Natham, John, Vice Admiral (2002), *Sea Strike: Projecting Persistent, Responsive and Precise Power* (Proceedings, 12/02).

Deverell, Jack (2001), *Coalition warfare and expeditionary operations* (RUSI Journal, 2/01), 18-21.

Dorman A., Smith M.L., Uttley M. (1998), *Jointery and Combined Operations in an Expeditionary Era: Defining the Issues* (Defence Analysis, Vol 14, No1), 1-8.

Fiorenza, Nicholas (2002), *Increasing Sealift Capacity, Shipbuilding programs plug critical gaps in European capabilities* (Armed Forces Journal International, 3/02), 52-53.

\_\_\_\_\_. (2002), *Euro Marines, European amphibious forces work together to improve their crisis-response capabilities* (Armed Forces Journal International, 4/02), 46-49.

Fraser, B. (1997), *Littoral Warfare and Joint Maritime Operations - UK Approaches and Capabilities* (Bairrigg Memorandum 32).

George J.L. (1999), *The New USMC Triad* (Naval Forces, 5/99), 6.

Goulding V.J. (2002), *Burnishing the Jewel in the Crown* (Marine Corps Gazette, 3/02), 16-20.

Gresham, F. (1996), *OMFTS and the Single Battle Concept* (Marine Corps Gazette, 6/96), 39-40.

Grimes, Vincent, Richard Scott & Mike Wells (1997), *Amphibious advancement* (Jane's Navy International Vol. 102, 9/97), 23-33.

Haberbosch C.E. (1999), *Operational GUARDIAN RETRIEVAL: OMFTS and STOM in 1997* (Marine Corps Gazette, 8/99), 32-34.

Hoffman J.T. (1996), *Stoking the Dragon's Fire* (Marine Corps Gazette, 6/96), 31-33.

Howard G., Blasiol L. (1999), *OMFTS: Forging a Path to the Future of Amphibious Warfare* (Marine Corps Gazette, 6/99), 18-21.

Janssen Lok, Joris & Richard Scott (1999), *Shipshapes for amphibious age* (Jane's Navy International, 1/99).

\_\_\_\_\_. (2002), *Amphibious lift bound by a common thread* (Jane's Navy International, 1/02).

King, Kendall, Captain USN (Ret) and Holmes, Tom, Commander USN (Ret) (2003), *Expeditionary Strike Group!* (Proceedings, 3/03), 90-93.

Krulak C.C. (1996), *Innovation, the Warfighting Laboratory, Sea Dragon, and the Fleet Marine* (Marine Corps Gazette, 12/96), 12-17.

\_\_\_\_\_. (1997), *Operational Maneuver From The Sea* (Proceedings, 1/97), 26-31.

Liddell-Hart B.H. (1960), *The Value of Amphibious Flexibility and Forces* (RUSI Journal, 11/60), 483-492.

Lindley-French, dr. Julian (2002), *Fighting Europe's Wars The British Way: The European Politics Of British Defense Doctrine* (R.U.S.I. Journal, 4/02), 74-76.

Moore C.W., Hanlon E. (2003), *Sea Basing, Operational Independence for a New Century* (Proceedings, 1/03), 80-85.

North Atlantic Treaty Organization (2002), *Strengthening European Security And Defense Capabilities* (NATO fact sheets, December 2000).

Oliver L.J. (2000), *OMFTS: Realizing a Concept* (Marines Corps Gazette, 9/00), 44-48.

Pike, John (2002), *Expeditionary Strike Group* (Global Security organization, 11/02).

Richter, Steve, Commander, USN (2002), *A new idea for a new world* (Surface Warfare, Fall 2002), 14-19.

Ross R. (1996), *The Role of Amphibious Forces in a Changing World* (RUSI Journal), 21-23.

Sayer W.A. (1999), *OMFTS Impact* (Marines Corps Gazette, 9/99), 48-50.

USMC (1996), *Operational Maneuver From The Sea - A Concept For The Projection of Naval Power Ashore* (Marine Corps Gazette, 6/96), A1-A6.

Van Loon, Henry (1998), *Amphibious interest, European NATO-countries strengthen their shore-storming capability* (Armed Forces Journal International, 9/98), 66-67.

Van Rijn W.J.E. (1999), *Interoperability - A Maritime Approach* (Naval Forces, 4/99), 10-16.

Valpolini, Paolo (1998), *Mediterranean partnership for NATO amphibious forces, CAFMED brings together assets from six NATO countries* (Jane's International Defense Review, 7/98), 28-31.

Verzere D.M. (1996), *A New Dimension in Amphibious Warfare* (Marine Corps Gazette, 9/96), 88-92.

Wells M. (1993), *Projecting Maritime Power Ashore: 'OMFTS'* (Navy International, Nov/Dec 93), 341.

### **Military Publications**

ATP8B - *Amphibious Operations* (Draft 2004). NATO amphibious doctrine.

BR 1806 (1999), *British Maritime Doctrine*, Second Edition, (London: HMSO).

Future Navy - *Littoral Manoeuvre Concept* (2003), (Portsmouth: CINCFLEET).

Headquarters USMC (2001), *Expeditionary Maneuver Warfare*, (Department of the Navy: Washington DC).

Jones J.L. (2000), *Marine Corps Strategy*.

JWP 0-01 (1996), *British Defence Doctrine* (London: CS(M)G, 1996).

Kujat H., Chairman of the North Atlantic Military Committee, and Hagglund G., Chairman of the EU Military Committee in a written recommendation to the EAI, Dec 2003.

Ministry of Defence (2001), *European Defence*, Paper No. 3 (London: The Stationary Office).

Ministry of Defence (2001), *Multinational Defense Co-operation*, Paper No. 2 (London: The Stationary Office).

Marine Corps (1996), *Improving Amphibious Capability Would Require Larger Share of Budget Than Previously Provided* (Washington DC: US General Accounting Office, February 1996).

Marine Corps Order (MCO) 3120.9A, *Policy for Marine Expeditionary Unit (Special Operations Capable)* (Washington, D.C.: Headquarters, United States Marine Corps, 24 November 1997).

Marine Corps Order (MCO) 3120.9B (DRAFT), *Policy for Marine Expeditionary Unit (Special Operations Capable)* (Washington, D.C.: Headquarters, United States Marine Corps, 9 October 2000).

Marine Corps Order (MCO) 3502.3, *Marine Expeditionary Unit (Special Operations Capable) Predeployment Training Program*, (Washington, D.C.: Headquarters, United States Marine Corps, 7 July 1995).

*Naval Amphibious Warfare Plan: Decisive Power from the Sea* (Washington DC: Department of the Navy, October 1999).

*The Naval Strategic Plan, The next fifteen years (2000)* (London: MoD, 2000).

The Strategic Defence Review, Supporting Essays (London: The Stationary Office, July 1998).

*The United Kingdom Approach to Amphibious Operations* (London: HMSO, 1997).

US Joint Chiefs of Staff (1996), *Joint vision 2010* (Washington, DC: US Govt. printing Office, 1996).

US Joint Chiefs of Staff (2000), *Joint vision 2020* (Washington, DC: US Govt. printing Office, 2000).

*United States Marine Corps Concepts and Programs* (2002).

USN (1992), *From the Sea: Preparing the Naval Service for the 21<sup>st</sup> Century*, September 1992.

US Quadrennial Defense Review Report (2001).

Van Riper, K. (1997), *STOM* (Department of the Navy, Marine Corps Combat Development Command, Quantico).

### **Internet Sources**

Clark V., *Sea Power 21: Operational Concepts for a New Era*, downloaded from [www.nwc.navy.mil/pao/cnoremarksCSF.htm](http://www.nwc.navy.mil/pao/cnoremarksCSF.htm)

European Union Defence official website, downloaded from [www.european-defence.co.uk/directory-eu.htm](http://www.european-defence.co.uk/directory-eu.htm)

Expeditionary Strike Group Global Security org, November 20, 2002.  
[URL:<http://www.globalsecurity.org/library/news/2002/11/mil-021120-navsea01.htm>](http://www.globalsecurity.org/library/news/2002/11/mil-021120-navsea01.htm)

Gardener N, Hulsman J., *Why Britain Will Fight in Iraq*, 31 Jan 2003, downloaded from [www.washtimes.com/commentary](http://www.washtimes.com/commentary)

Gause K., Lea C., Whiteneck D., Thompson E., *US Navy Interoperability with its High-End Allies*, downloaded from [www.dodccr.org/2000ICCRTS/cd/papers/Track3/](http://www.dodccr.org/2000ICCRTS/cd/papers/Track3/)

Kilvert-Jones T.D., *One Year Later: The UK Strategic Defence Review - An Engaged and Evolving Expeditionary Force*, downloaded from [www.navyleague.org/seapower/one\\_year\\_later](http://www.navyleague.org/seapower/one_year_later)

Lamb H., *A Coalition of the Willing*, 11 Jan 2003, downloaded from [www.worldnetdaily.com/news](http://www.worldnetdaily.com/news)

The Helsinki European Council 10-11 December web page, downloaded from [www.europe.eu.int.htm](http://www.europe.eu.int.htm)

*The Strategic Defence Review: A New Chapter*, downloaded from [www.mod.uk/issues/sdr/newchapter](http://www.mod.uk/issues/sdr/newchapter)

US Defense spending, downloaded from [www.commondreams.org/headlines03/0201-07.htm](http://www.commondreams.org/headlines03/0201-07.htm)

USMC, *Operational Maneuver From The Sea: A Marine Corps Concept Paper*, downloaded from [www.concepts.quantico.usmc.mil/omfts](http://www.concepts.quantico.usmc.mil/omfts)

USN *Sea Power 21*, downloaded from [www.usni.org/Proceedings/Articles02/PROcno.htm](http://www.usni.org/Proceedings/Articles02/PROcno.htm)